In the Claims:

1.   (Currently Amended) A method for providing quality of service (QoS) guarantee, wherein the method comprises the steps of:

creating, at an edge router, a table of service traffic flow classification table;

establishing, at an uplink interface of the edge router, a plurality of label switching paths; paths, and constructing an edge-to-edge label switching path concatenated pipe by the established label switching paths;

configuring attributes of the label switching paths;

obtaining, at the edge router, service traffic flow information of a service traffic flow from a service control equipment, the service traffic flow information comprising at least one of flow classification spec, priority, QoS class, bandwidth requirement, and path information of the service traffic flow, and the service control equipment notifying the changes of the service traffic flow to the edge router in one or more of the following occasions: when a service session is initialized, when the service traffic flow of the service session changes, or when the service session ends;

updating dynamically, at the edge router, table entries of the table of service traffic flow classification table according to the obtained service traffic flow information;

classifying and conditioning the service traffic flows entering into a core network at a downlink interface of the edge router according to the table of service traffic flow classification table; and

forwarding the processed service traffic flows by the uplink interface of the edge router according to the attributes of the label switching paths, wherein forwarding the processed service traffic flows comprises steering the processed service traffic flows to an egress router of the core

network through the edge-to-edge label switching path concatenated pipe;

wherein the step of classifying and conditioning the service traffic flows entering into a core network at a downlink interface of an edge router according to the ~~table of~~ service traffic flow classification ~~table~~ comprises the steps of

(a) obtaining, at the edge router, a service traffic flow identification of the service traffic flow entering into the core network;

(b) looking up the table of service traffic flow classification ~~table~~ according to the service traffic flow identification;

(c) classifying and marking the service traffic flows according to the corresponding priority and QoS class;

(d) shaping and policing the service traffic flows according to the corresponding bandwidth requirement; and

(e) selecting the forwarding mode and path of the service traffic flows according to the corresponding outgoing aggregation path information.

2-3.   (Canceled)

4.   (Previously Presented) The method according to claim 1, wherein the step of obtaining service traffic flow information is directly obtaining the service traffic flow information from the service control equipment.

5.   (Previously Presented) The method according to claim 1, wherein the step of obtaining service traffic flow information is obtaining the service traffic flow information from the service

control equipment through a resource control equipment, the resource control equipment distributing route and resource according to QoS requirements of the service traffic flow.

6. (Original) The method according to claim 1, wherein the step of establishing a plurality of label switching paths is configuring the label switching paths statically at the uplink interface of the edge router.

7. (Original) The method according to claim 1, wherein the step of establishing a plurality of label switching paths is establishing the label switching paths dynamically via constraint-routing label distribution protocol (CR-LDP) or resource reservation protocol–traffic engineering (RSVP-TE) at the uplink interfaces of the edge router.

8. (Original) The method according to claim 1, wherein the step of establishing a plurality of label switching paths further comprises the step of:

constructing an edge-to-edge label switching path concatenated pipe or a virtual multi-protocol label switching network on the core network by using the label switching paths.

9. (Original) The method according to claim 1, wherein the step of configuring the attributes of the label switching paths is:

configuring traffic class, priority, QoS class, bandwidth attribute of the label switching paths by network capacity planning and traffic engineering statistics.

10.-14. (Canceled)

15.   (Currently Amended) The method according to claim 1, wherein the method further
comprises the step of:

     modifying the <u>table of</u> service traffic flow classification ~~table~~ according to change of the
service traffic flow when the service traffic flow is changed.

16.   (Currently Amended) The method according to claim 15, wherein the step of modifying
the <u>table of</u> service traffic flow classification ~~table~~ when the service traffic flow is changed
comprises:

     obtaining and adding the service traffic flow information of a service session into the
<u>table of</u> service traffic flow classification ~~table~~ when the session is established;

     canceling the service traffic flow information of the service session from the <u>table of</u>
service traffic flow classification ~~table~~ when the service session is ended.

17.   (Currently Amended) An apparatus for providing quality of service (QoS) guarantee,
wherein the apparatus comprises:

     a service traffic flow information obtaining means, for creating a <u>table of</u> service traffic
flow classification ~~table~~, obtaining service traffic flow information of a service traffic flow from
a service control equipment notifying of changes of the service traffic flow in at least one of the
following occasions: when a service session is initialized, when a service traffic flow of the
service session changes, or when the service session ends, and updating dynamically table entries
of the <u>table of</u> service traffic flow classification ~~table~~ according to the obtained service traffic
flow information, wherein the service traffic flow information comprises at least one of flow
classification spec, priority, QoS class, bandwidth requirement, and path information of the
service traffic flow;

a label switching path establishing means, for establishing a plurality of label switching paths and constructing an edge-to-edge label switching path concatenated pipe by the established label switching paths;

a label switching path configuring means, for configuring the attributes of the label switching paths;

~~a first performing means for obtaining~~ a downlink interface configured to obtain a service traffic flow identification of the service traffic flow entering into the core network, ~~looking~~ look up the table of service traffic flow classification ~~table~~ according to the service traffic flow identification, ~~classifying and marking~~ classify and mark the service traffic flows according to the corresponding priority and QoS class, ~~shaping and policing~~ shape and police the service traffic flows according to the corresponding bandwidth requirement, and ~~selecting~~ select the forwarding mode and path of the service traffic flows according to [[the]] corresponding outgoing aggregation path information; and

~~a second performing means, for forwarding the processed service traffic flows according to the attributes of the label switching paths~~ an uplink interface configured to steer the service traffic flows to an egress router of the core network through the edge-to-edge label switching path concatenated pipe.

18. (Currently Amended) An edge router for providing quality of service (QoS) guarantee, comprises a configuration management interface, wherein the edge router further comprises:

a service traffic flow information obtaining means, for creating a table of service traffic flow classification ~~table~~, and obtaining service traffic flow information of a service traffic flow from a service control equipment notifying of changes of the service traffic flow in at least one of the following occasions: when a service session is initialized, when the service traffic flow of the

service session changes, or when the service session ends, and updating dynamically table entries of the table of service traffic flow classification ~~table~~ according to the obtained service traffic flow information, wherein the service traffic flow information comprises flow classification spec, priority, QoS class, bandwidth requirement, and path information of the service traffic flow of the service traffic flow;

a label switching path establishing means, for establishing a plurality of label switching paths and constructing an edge-to-edge label switch path concatenated pipe by the established label switching paths;

a label switching path configuring means, for configuring the attributes of the label switching paths;

~~a first performing means for obtaining~~ a downlink interface configured to configure a service traffic flow identification of the service traffic flow entering into the core network, ~~looking~~ look up the table of service traffic flow classification ~~table~~ according to the service traffic flow identification, ~~classifying and marking~~ classify and mark the service traffic flows according to the corresponding priority and QoS class, ~~shaping and policing~~ shape and police the service traffic flows according to the corresponding bandwidth requirement, and ~~selecting~~ select the forwarding mode and path of the service traffic flows according to [[the]] corresponding outgoing aggregation path information; and

~~a second performing means, for forwarding the processed service traffic flow according to the attributes of the label switching paths~~ an uplink interface configured to steer the service traffic flows to an egress router of the core network through the edge-to-edge label switch path concatenated pipe.

19.   (Currently Amended) A system for providing quality of service (QoS) guarantee, comprises a service control equipment, a resource control equipment, and an edge router, wherein the edge router comprises:

a service traffic flow information obtaining means, for creating a table of service traffic flow classification ~~table~~, obtaining service traffic flow information of a service traffic flow from a service control equipment notifying of changes of the service traffic flow, and updating dynamically table entries of the table of service traffic flow classification ~~table~~ according to the obtained service traffic flow information, wherein the service traffic flow information comprises flow classification spec, priority, QoS class, bandwidth requirement, and path information of the service traffic flow of the service traffic flow;

a label switching path establishing means, for establishing a plurality of label switching paths and constructing an edge-to-edge label switching path concatenated pipe by the established label switching paths;

a label switching path configuring means, for configuring the attributes of the label switching paths;

~~a first performing means for obtaining~~ a downlink interface configured to obtain a service traffic flow identification of the service traffic flow entering into the core network, ~~looking~~ look up the table of service traffic flow classification ~~table~~ according to the service traffic flow identification, ~~classifying and marking~~ classify and mark the service traffic flows according to the corresponding priority and QoS class, ~~shaping and policing~~ shape and police the service traffic flows according to the corresponding bandwidth requirement, and ~~selecting~~ select the forwarding mode and path of the service traffic flows according to the corresponding outgoing aggregation path information; and

~~a second performing means, for forwarding the processed service traffic flow according to the attributes of the label switching paths~~ an uplink interface configured to steer the service traffic flows to an egress router of the core network through the edge-to-edge label switching path concatenated pipe.

20.   (Original) The method according to claim 1, wherein the core network is an IP network.

21.   (Canceled)

22.   (Previously Presented) The edge router according to claim 18, wherein the service traffic flow information of a service traffic flow is obtained directly from the service control equipment or from the service control equipment through a resource control equipment, the resource control equipment distributing route and resource according to QoS requirements of the service traffic flow.

23-40. (Canceled)